

1. St. Albans tile drainage article Saturday.
 2. St. Albans 400 ac tile drainage installed this fall; b/c lot concern about it - tile drainage going in quickly b/c hearing moratorium
- does benefit those
 - focus has been on TP, now look @ soluble TDP ↑ - readily avail. for algae
 - 39,000' 5 mile in 2 days
 - don't have lot data from VT TP
- TReactive > 4000 mg/L
- few samples here from VT →
- don't
 - literature from mid-west ⇒
 - once tile drained most water 90% come thru tile line @ sign concentrat' 418 load TP comes from tile; event basis 70%
 - on H₂O shed basis - Ohio - 47% at end H₂O shed from tile

3. Canada - 40-50% total H₂O shed from tile

4. How deal

how much coming out

how fit into TMDL

tools NC P-Index has subroutine to incorp tile drainage

APEX modeling

Look @ practices devel suit practices for

P-removal system

friends Lake Champlain

Young - stations tile drainage practices

baseline monitoring now

practices he's looking @ :

(1) drainage H₂O management
@ end tile line (shut off in winter - ground H₂O build up thru Not thru growing season used in MI to reduce N losses in fields - think similar to P problem: works better larger field w/ 1 outlet; but not as efficient w/ slopes or multiple outlet.

P-Removal Practice

EQIP, but no monitoring of systems

E of Mnl Program could put in some monit?

(?)

What is best P adsorb' material?

Steel Slag = hazardous material

Need a more ideal material:

Cal Carbonate limestone

H₂O test residuals

? lime (NY mine) → concrete not sure avail

Gypsum - 10x more soluble in H₂O so may not

Fly Ash

NRCS approved →

practice for

implmnt' in VT

and NY. Not aware

in VT

conserv' Activity Plan

needs to be done before

implement this practice

don't have anyone approved in VT to do these plans.

Don't have tech expertise

Consultants need to be certified.

DOY:

Working w/ Don Ross @ UVM - bench tests.

Limestone Residuals?

Tet residuals - limited avail in VT; NH "stockpile" of residuals could be a source
Champlain Water District has residuals avail but very competitive and readily available

SP - O

How strong data on expansion of tile?

Recent data indicate rate tiles going in?

Can pt to reliable data sources → no all anecdotal but coming in from all sources.

- Agency Ag - certⁱⁿ for installers report where tiles going in
no

No hard data

State has Maria in Jewett Brook - idⁱⁿ fields w/ tile drainage

TAC Proposal - map drainage in Jewett BK map & estimate where outlets via LiDAR

12 outlets & monitor for 1yr w/ diff cropping systems etc
get idea of quantity of P

Called Tech Sp @ Nat Spatialⁱⁿ - use ground penetrating radar to id tile drainage & map over H₂O shed or regional basis. Cost [Get a baseline] then req cert

EP - questions coming up @ mtg - answer - impt concern; newly arisen likely reason captured past trends based on previous data so calⁱⁿ reasonable for past trends

@ Tact. Basin Planning & as gather more info areas id'd then incorp. into plan to control and reduce P at Tact. Basin level.

KP - prob. accurate relative to

→ assuming surface generated since H₂O sheds 50% from tile sys vs surface

→ surface project to meet goal and missing subsurface in the scenario tool

P → SWAT Model - used Missing why land & c+d areas w/ slopes below certain level have tile → used this approach basin wide → Need to incorp MTO scenario tool

KP - APEX - doesn't do good job w/ BMP (3).
Texas Lab - updating APEX model so more robust/accurate

EP - whenever tile drain modeled \rightarrow have higher Q \Rightarrow need to ask T² and not in CSA report. Unclear how compares w/ surface runoff
Need to sum w/ sum @ T²

Opport to get addressed @ Tact. Basin Level \rightarrow ground truthing; A to assume in Scenario Tool.

Assume adjustments + carefully document

KP - Tact Basin Plan doesn't seem much document^{wr} on Ag-side leaving to VAAFM and NRCS

EP - see more detailed TBPs - more involved described in Phase I Plan. Substant Δ from present TBP, EPA push accuracy assumption + amt P red^{ns} from BMPs. State use Scen. Tool to determine of BMPs + red^{ns} - state will need help from NRCS & VAAFM more on hook to provide assist.

KP - on ground resource concern
Protect^{wr} by fed law

EP -

KP - tracking/implent^{wr} Vicki wants to start this ASAP!
for BMP implement^{wr} & load reduc^{ns}; want to collaborate w/ state & EPA!

EP - T² to help w/ tracking
VAAFM has # for partner database - Mike Middleman

P → can provide efficiencies to me?
P → yes, latest version coming and will provide

show Vicki how work wants to move ASAP by EOY!

P - monetarium not as likely, but cert^{wr} more likely.
not sure have authority for monetarium